



Arthroscopic Management of Synovial Chondromatosis of the Hip

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We present a female patient without any underlying disease. Progressive pain, and locking sensation of the right hip with limited range of motion were told and synovial chondromatosis (SC) of right hip was diagnosed. Radiographies revealed characteristic finding of SC including multiple calcified loose bodies within the right hip joint. Removal of cartilaginous fragments as well as nearly total synovectomy was performed arthroscopically on the right hip. Short-term postoperative follow-up of our patient revealed improved hip function and resolution of all symptoms.

Key words: Hip joint, synovial chondromatosis, surgery, arthroscopic

INTRODUCTION

Synovial chondromatosis (SC) is a disease commonly affecting large joints including knee, hip, and shoulder. Although the condition has been described as a benign neoplasm of the synovium, its progressive dissemination into the articular structures will result in joint destruction. The etiology of SC is not clearly known yet; nevertheless, metaplasia of synovial lining tissue into chondrocytes has been explained as a probable cause.^{1,2} It usually affects a single joint in which the most common site is the knee and is twice as frequent in men as in women. It is commonly seen during the third to fifth decades of life presenting with aggravating joint pain, swelling, crepitus, and limited range of motion (ROM). Moreover, palpable swelling and effusion may be the only clinical finding.

CASE REPORT

A 37-year-old female had experienced progressively worse pain around the right hip joint for 2 years. She consulted an orthopedic clinic and was treated with nonsteroidal anti-inflammatory drugs, but this did not relieve the pain.

Preoperative radiographs showed a lot of calcified loose bodies around right hip [Figure 1]. Magnetic resonance imaging showed proliferation of the synovium within the joint space without obvious invasion to the acetabulum [Figure 2].

Under the impression of SC, the patient underwent arthroscopic debridement and partial resection of hypertrophic synovium and removal of loose bodies in the right hip [Figure 3].

In the hip arthroscopic surgery, the patient was placed in the supine position on the fracture table under general anesthesia. Traction of the involved limb at 25° adduction was performed under fluoroscopic assistance. A blunt trocar was placed into the hip joint after a sequential dilatation of the tract. An arthroscope with a protecting sheath was inserted, and the hip joint was examined. All visible loose bodies were removed [Figure 4], the synovium was examined for the abnormal area, and these were excised arthroscopically. The appearances of the bodies and the synovium were recorded. All specimens obtained from the surgeries were examined by experienced pathologists [Figure 5].

Early active assistive ROM was started following the surgery. She gained a range of 0–100° on the right hip. Symptoms resolved significantly, and the patient was able to walk without any difficulty. She was kept follow-up at our hospital for 2 years [Figure 6].

DISCUSSION

SC or osteochondromatosis (when ossification is present), also called Reichel's syndrome, was first described by Reichel in

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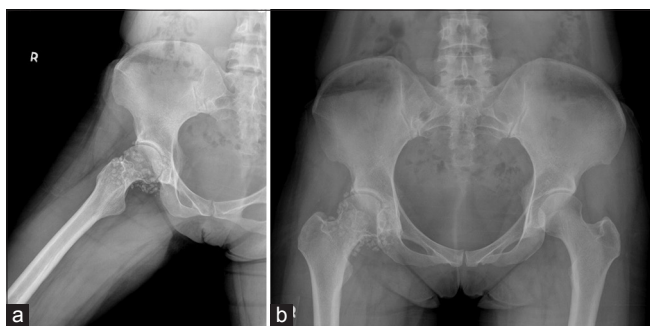


Figure 1: (a and b) Preoperative radiographs showed a lot of calcified loose bodies around right hip

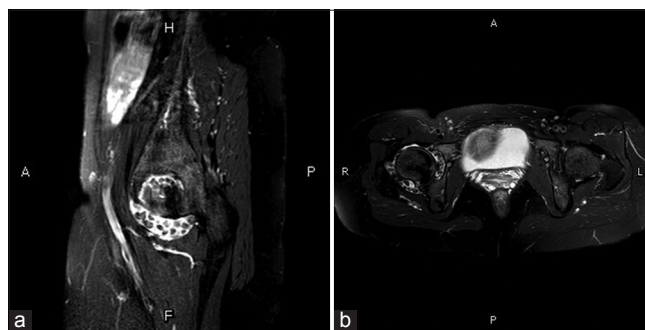


Figure 2: (a and b) Magnetic resonance imaging showed proliferation of the synovium within the joint space without obvious invasion to the acetabulum

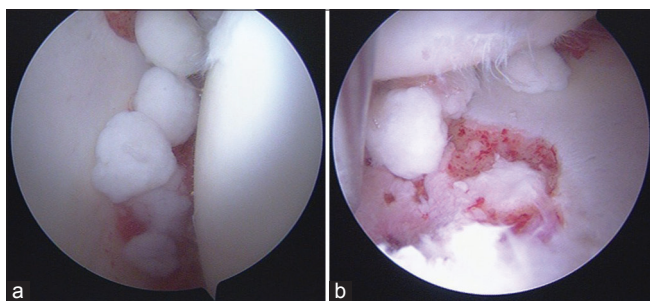


Figure 3: (a and b) Multiple loose bodies and cartilage destruction were found under scope

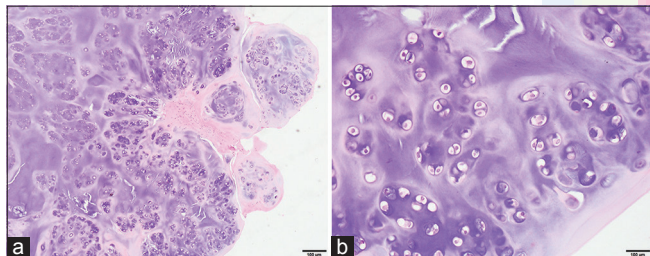


Figure 5: (a) Lobulated chondroid tissue ($\times 40$) (b) mature chondrocytes with bland nuclei and myxochondroid stroma ($\times 200$)

1900.³ The etiology of this disorder is still unclear. Many theories such as reactivation of residual embryonal cells, traumatic initiation, or benign neoplastic disease have been advocated.⁴ The generally accepted pathogenesis of the submesothelial foci of cartilaginous bodies is that they are formed by metaplasia of pluripotential cells in the synovial membrane.⁵ These nodules can ossify by endochondral bone formation and attach to the synovium by a thin vascular pedicle. They may break free and become loose bodies in the joint space.

Primary SC should be differentiated from cartilaginous loose bodies that are secondary to other joint diseases such as degenerative arthritis.⁶ Loose bodies in secondary SC showed uniform chondrocytes and annular calcification surrounding the core tissue.



Figure 4: All visible loose bodies were removed one by one

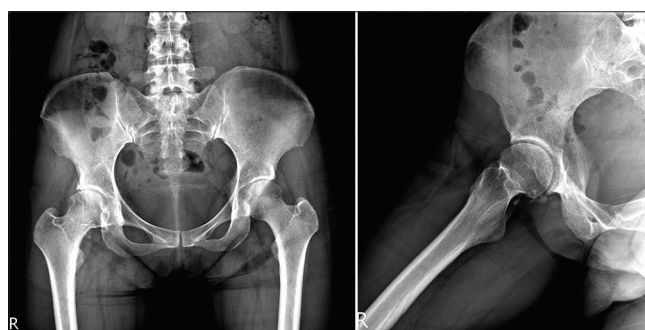


Figure 6: 2 years latter

Three phases have been described for this disease.⁷ In the first active phase, the disease is limited to the synovium without loose body formation; in the second transitional phase, there are both loose bodies and intrasynovial lesions; and in the third quiescent phase, there are only free loose bodies without the active intrasynovial process. The disease is most commonly seen in the third to fifth decades, and there is a predominance of men to women in a ratio of

Hip scope for chondromatosis

about 2:1.⁴ The most common joint involved is the knee, but the elbow, hip, shoulder, ankle, temporomandibular joints, and other small joints have also been described. Extra-articular involvement (bursa or tendon sheath) is extremely rare.

With advances in arthroscopic surgeries, an arthroscopic operation of the hip joint with SC can be a reliable procedure. However, to most surgeons, hip arthroscopy may be a technically difficult procedure to perform because of the deep-seated location, relatively limited hip joint space, and few indications or infrequent opportunities to perform this procedure. To overcome these problems, we used traditional approaches to the hip joint and introduced the arthroscopic instruments through a small anterior capsulotomy incision without hip dislocation. This provides an easy and safe method for arthroscopic access to the hip joint. The procedure also decreases the complications of hip arthroscopy such as neurovascular trauma during traction or portal placement, and iatrogenic damage to the articular cartilage and acetabular labrum when introducing instruments.⁸

CONCLUSION

An arthroscopy-assisted synovectomy with removal of the loose bodies has the following advantages over a traditional hip arthrotomy surgery. It is performed without dislocation of the hip, which can prevent the complication of osteonecrosis of the femoral head. Under a magnification of the video system, a synovectomy can be done properly with arthroscopic instruments. In spite of the limited follow-up period of one case, we believe that this method may provide the benefits of both arthroscopic and open procedures and may minimize complications for proper management of this disorder.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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